WHAT IS CLAIMED IS:

1. A process for producing crystalline trehalose dihyrdrate having an elongated crystalline structure with a proportion of the length in the *c* axis to that in the *b* axis being less than 2.0, which process comprises:

placing in a crystallizer a supersaturated aqueous trehalose solution with a trehalose content of at least 98 w/w%, on a dry solid basis;

coexisting a crystalline trehalose dihydrate as a seed crystal;

growing the crystalline trehalose dihydrate by cooling the mixture gradually to control the supersaturation degree to a level of less than 1.15; and

separating and drying the resulting mixture to collect the grown crystalline trehalose dihydrate.

2. The process of claim 1, wherein said crystallizer is a cylindrical rotatory crystallizer, and said growing and cooling is carried out under rotatory motion.

3. The process of claim 1, wherein the growing step of crystalline trehalose dihydrate is carried at a temperature of about 20 to about 90°C.

4. A process for producing a composition, which process comprises

incorporating a crystalline trehalose dihydrate having an elongated crystalline structure with a proportion of the length in the *c* axis to that in the *b* axis of less than 2.0, and with a length in the c axis of at least 3mm, into a material product, wherein

said crystalline trehalose dihydrate is producible by:

placing in a crystallizer a supersaturated aqueous trehalose solution with a trehalose content of at least 98 w/w%, on a dry solid basis;

coexisting a crystalline trehalose dihydrate as a seed crystal;

growing the crystalline trehalose dihydrate by cooling the mixture gradually to control the supersaturation degree to a level of less than 1.15; and

separating and drying the resulting mixture to collect the grown crystalline trehalose dihydrate.

5. In a process for producing a sweetener, a candy fluff, a baked confectionary, or an alcoholic beverage with fruit, comprising

incorporating a first component into a material product,

the improvement wherein said first component is a crystalline trehalose dihydrate produced according to claim 1.

6. A method for growing crystalline trehalose dihydrate which has an elongated crystalline structure with a proportion of the length of the *c* axis to that of the *b* axis being less than 2.0, the c axis having a length of at least 3mm, which process comprises:

placing in a crystallizer a supersaturated aqueous trehalose solution with a trehalose content of at least 98 w/w%, on a dry solid basis;

coexisting a crystalline trehalose dihydrate as a seed crystal; and

growing the crystalline trehalose dihydrate by cooling the mixture gradually to control the supersaturation degree to a level of less than 1.15.

7. The method of claim 6, wherein an about 0.01 to about 20 w/w % of said crystalline trehalose dihydrate, on a dry solid basis, is used as the seed crystal to the trehalose in the supersaturated aqueous trehalose solution, and

said seed crystal has an elongated crystalline structure with a proportion of the length in the *c* axis to that in the *b* axis being less than 2.0.